General information

Wellbore name	6305/5-1
Type	EXPLORATION
Purpose	WILDCAT
Status	P&A
Factmaps in new window	link to map
Main area	NORWEGIAN SEA
Field	ORMEN LANGE
Discovery	6305/5-1 Ormen lange
Well name	6305/5-1
Seismic location	inline 2153 & x-line 4757
Production licence	209
Drilling operator	Norsk Hydro Produksjon AS
Drill permit	900-L
Drilling facility	OCEAN ALLIANCE
Drilling days	73
Entered date	27.07.1997
Completed date	07.10.1997
Release date	07.10.1999
Publication date	15.11.2001
Purpose - planned	WILDCAT
Reentry	NO
Content	GAS
Discovery wellbore	YES
1st level with HC, age	PALEOCENE
1st level with HC, formation	EGGA FM (INFORMAL)
Kelly bushing elevation [m]	26.0
Water depth [m]	888.5
Total depth (MD) [m RKB]	3053.0
Final vertical depth (TVD) [m RKB]	3052.8
Maximum inclination [°]	13
Bottom hole temperature [°C]	81
Oldest penetrated age	LATE CRETACEOUS
Oldest penetrated formation	NISE FM
Geodetic datum	ED50
NS degrees	63° 32' 27.5'' N
EW degrees	5° 20' 14.9'' E
NS UTM [m]	7048160.15
EW UTM [m]	616189.14

UTM zone	31
NPDID wellbore	3144

Wellbore history

General

Well 6305/5-1 was an exploration well which was committed to test the reservoir potential on the Tertiary sequence in the 209 license off shore Mid Norway. The targets were Paleocene, with a sand ("Egga Member") in the Tang Formation as the primary target. The objectives were to test the reservoir potential and seals within the prospects, and to obtain critical information on drilling hazards in ooze sediments. Further, the well should provide an optimal seismic tie to the subsurface and to understand the seismic response to the rock properties and fluid fill.

Operations and results

Wildcat well 6305/5-1 was spudded with the semi-submersible installation "Ocean Alliance" on 27 July 1997 and drilled to a total depth of 3053 m in the Nise Formation. The well was drilled water based with KCl brine down to 1544 m and with KCL polymer mud from 1544 m to TD. No problems were experienced in the ooze sediment. Normal pressure was observed through the Brygge Formation. Hole stability problems were experienced in the lower part of the Hordaland Group from 2090 m down to top Tare Formation ("the green shale"). The well proved gas in the "Egga Member" sand, which made it the discovery well for the gigantic Ormen Lange gas discovery. Geochemical analyses of the gas show 95% methane. No potential reservoir sandstone was encountered in the Tare Formation, penetrated at 2327 m. Reservoir sand was encountered in the "Egga Member" of the Tang Formation, penetrated at 2718 m and in the Springar Formation, penetrated at 2780 m. The upper part of the "Egga Member", from 2718 m to 2771 m, consist of a blocky sand. The lower part of the "Egga Member", from 2771 m to 2780 m consists of interbedded sands and mudstone. The upper part of the Springar Formation consists of interbedded sands and mudstones, with a thickening and upwards trend. Six cores were cut through the Tang Formation from 2730 m to 2840.5 m. Five MDT gas samples were taken in the Egga member reservoir sands from 2747 to 2789.1 m. The well was temporarily plugged and abandoned as a gas discovery on 7 October 1997.

Testing

No DST was performed

Cuttings at the Norwegian Offshore Directorate

Cutting sample, top depth [m]	Cutting samples, bottom depth [m]
1550.00	3055.00

Cuttings available for sampling?	YES

Cores at the Norwegian Offshore Directorate

Core sample number	Core sample - top depth	Core sample - bottom depth	Core sample depth - uom
1	2730.0	2748.6	[m]
2	2749.0	2767.0	[m]
3	2767.5	2771.8	[m]
4	2771.8	2783.9	[m]
5	2785.0	2791.9	[m]
6	2792.0	2816.3	[m]

Total core sample length [m]	84.2
Cores available for sampling?	YES

Core photos


2730-2735m


2735-2740m


2740-2745m


2745-2748m


2749-2754m


2754-2759m


2759-2764m


2764-2767m


2767-2771m


2771-2776m


2776-2781m


2781-2783m


2785-2790m


2790-2792m


2792-2797m


2797-2802m


2802-2807m


2807-2812m


2812-2816m

Palynological slides at the Norwegian Offshore Directorate

Sample depth	Depth unit	Sample type	Laboratory
0.2	[m]	DC	OD
1550.0	[m]	DC	OD
1560.0	[m]	DC	OD
1570.0	[m]	DC	OD
1574.0	[m]	SWC	RRI
1580.0	[m]	DC	OD
1586.0	[m]	SWC	RRI
1590.0	[m]	DC	OD
1599.0	[m]	SWC	RRI
1600.0	[m]	DC	OD
1610.0	[m]	DC	OD
1611.0	[m]	SWC	RRI
1620.0	[m]	DC	OD
1630.0	[m]	DC	OD
1631.0	[m]	SWC	RRI
1640.0	[m]	DC	OD
1641.0	[m]	SWC	RRI
1650.0	[m]	DC	OD
1654.0	[m]	SWC	RRI
1659.0	[m]	SWC	RRI
1660.0	[m]	DC	OD
1666.0	[m]	SWC	RRI
1670.0	[m]	DC	OD
1676.0	[m]	SWC	RRI
1680.0	[m]	DC	OD
1687.0	[m]	SWC	RRI
1690.0	[m]	DC	OD
1696.0	[m]	SWC	RRI
1700.0	[m]	DC	OD

1706.0	[m]	SWC	RRI
1710.0	[m]	DC	OD
1716.0	[m]	SWC	RRI
1720.0	[m]	DC	OD
1728.0	[m]	SWC	RRI
1730.0	[m]	DC	OD
1733.0	[m]	SWC	RRI
1736.0	[m]	SWC	RRI
1740.0	[m]	DC	OD
1746.0	[m]	SWC	RRI
1750.0	[m]	DC	OD
1756.0	[m]	SWC	RRI
1760.0	[m]	DC	OD
1766.0	[m]	SWC	RRI
1770.0	[m]	DC	OD
1780.0	[m]	DC	OD
1781.0	[m]	SWC	RRI
1790.0	[m]	DC	OD
1799.0	[m]	SWC	RRI
1800.0	[m]	DC	OD
1810.0	[m]	DC	OD
1814.0	[m]	SWC	RRI
1820.0	[m]	DC	OD
1828.0	[m]	SWC	RRI
1830.0	[m]	DC	OD
1840.0	[m]	DC	OD
1841.0	[m]	SWC	RRI
1846.0	[m]	SWC	RRI
1850.0	[m]	DC	OD
1860.0	[m]	DC	OD
1861.0	[m]	SWC	RRI
1866.0	[m]	SWC	RRI
1870.0	[m]	DC	OD
1880.0	[m]	DC	OD
1890.0	[m]	DC	OD
1900.0	[m]	DC	OD
1910.0	[m]	DC	OD
1920.0	[m]	DC	OD
1920.0	[m]	SWC	RRI
1930.0	[m]	DC	OD

1931.0	[m]	SWC	RRI
1940.0	[m]	DC	OD
1943.0	[m]	SWC	RRI
1950.0	[m]	DC	OD
1960.0	[m]	DC	OD
1961.0	[m]	SWC	RRI
1970.0	[m]	DC	OD
1980.0	[m]	DC	OD
1981.0	[m]	SWC	RRI
1986.0	[m]	SWC	RRI
1990.0	[m]	DC	OD
1996.0	[m]	SWC	RRI
2000.0	[m]	DC	OD
2005.0	[m]	SWC	RRI
2010.0	[m]	DC	OD
2011.0	[m]	SWC	RRI
2016.0	[m]	SWC	RRI
2020.0	[m]	DC	OD
2026.0	[m]	SWC	RRI
2030.0	[m]	DC	OD
2040.0	[m]	DC	OD
2041.0	[m]	SWC	RRI
2050.0	[m]	DC	OD
2060.0	[m]	DC	OD
2070.0	[m]	DC	OD
2071.0	[m]	SWC	RRI
2080.0	[m]	DC	OD
2081.0	[m]	SWC	RRI
2090.0	[m]	DC	OD
2091.0	[m]	SWC	RRI
2100.0	[m]	DC	OD
2101.0	[m]	SWC	RRI
2110.0	[m]	DC	OD
2111.0	[m]	SWC	RRI
2116.0	[m]	SWC	RRI
2120.0	[m]	DC	OD
2121.0	[m]	SWC	RRI
2126.0	[m]	SWC	RRI
2130.0	[m]	DC	OD
2131.0	[m]	SWC	RRI

2140.0	[m]	DC	OD
2141.0	[m]	SWC	RRI
2150.0	[m]	DC	RRI
2150.0	[m]	DC	OD
2160.0	[m]	DC	OD
2160.0	[m]	DC	RRI
2170.0	[m]	DC	RRI
2170.0	[m]	DC	OD
2180.0	[m]	DC	OD
2180.0	[m]	DC	RRI
2190.0	[m]	DC	RRI
2190.0	[m]	DC	OD
2200.0	[m]	DC	OD
2200.0	[m]	DC	RRI
2210.0	[m]	DC	RRI
2210.0	[m]	DC	OD
2220.0	[m]	DC	OD
2220.0	[m]	DC	RRI
2230.0	[m]	DC	RRI
2230.0	[m]	DC	OD
2240.0	[m]	DC	OD
2240.0	[m]	DC	RRI
2250.0	[m]	DC	RRI
2250.0	[m]	DC	OD
2260.0	[m]	DC	OD
2260.0	[m]	DC	RRI
2270.0	[m]	DC	RRI
2270.0	[m]	DC	OD
2280.0	[m]	DC	OD
2280.0	[m]	DC	RRI
2290.0	[m]	DC	RRI
2290.0	[m]	DC	OD
2300.0	[m]	DC	OD
2300.0	[m]	DC	RRI
2310.0	[m]	DC	RRI
2310.0	[m]	DC	OD
2320.0	[m]	DC	OD
2320.0	[m]	DC	RRI
2330.0	[m]	DC	RRI
2330.0	[m]	DC	OD

2340.0	[m]	DC	OD
2340.0	[m]	DC	RRI
2350.0	[m]	DC	RRI
2350.0	[m]	DC	OD
2360.0	[m]	DC	OD
2360.0	[m]	DC	RRI
2370.0	[m]	DC	RRI
2370.0	[m]	DC	OD
2380.0	[m]	DC	OD
2380.0	[m]	DC	RRI
2390.0	[m]	DC	RRI
2390.0	[m]	DC	OD
2400.0	[m]	DC	OD
2400.0	[m]	DC	RRI
2410.0	[m]	DC	RRI
2410.0	[m]	DC	OD
2420.0	[m]	DC	OD
2430.0	[m]	DC	OD
2430.0	[m]	DC	RRI
2440.0	[m]	DC	RRI
2440.0	[m]	DC	OD
2450.0	[m]	DC	OD
2450.0	[m]	DC	RRI
2460.0	[m]	DC	RRI
2460.0	[m]	DC	OD
2470.0	[m]	DC	OD
2470.0	[m]	DC	RRI
2480.0	[m]	DC	RRI
2480.0	[m]	DC	OD
2490.0	[m]	DC	OD
2490.0	[m]	DC	RRI
2500.0	[m]	DC	RRI
2500.0	[m]	DC	OD
2510.0	[m]	DC	OD
2510.0	[m]	DC	RRI
2520.0	[m]	DC	RRI
2520.0	[m]	DC	OD
2540.0	[m]	DC	RRI
2540.0	[m]	DC	OD
2550.0	[m]	DC	OD

2550.0	[m]	DC	RRI
2560.0	[m]	DC	RRI
2560.0	[m]	DC	OD
2570.0	[m]	DC	OD
2580.0	[m]	DC	OD
2590.0	[m]	DC	OD
2600.0	[m]	DC	OD
2610.0	[m]	DC	OD
2620.0	[m]	DC	OD
2630.0	[m]	DC	OD
2640.0	[m]	DC	OD
2650.0	[m]	DC	OD
2660.0	[m]	DC	OD
2670.0	[m]	DC	OD
2680.0	[m]	DC	OD
2690.0	[m]	DC	OD
2700.0	[m]	DC	OD
2700.0	[m]	DC	RRI
2710.0	[m]	DC	OD
2710.0	[m]	DC	RRI
2720.0	[m]	DC	OD
2720.0	[m]	DC	RRI
2730.0	[m]	DC	RRI
2731.0	[m]	C	RRI
2731.6	[m]	C	OD
2732.0	[m]	C	RRI
2733.0	[m]	C	RRI
2734.0	[m]	C	RRI
2735.0	[m]	C	RRI
2738.0	[m]	C	RRI
2744.0	[m]	C	RRI
2745.0	[m]	C	RRI
2745.8	[m]	C	OD
2749.0	[m]	C	RRI
2751.0	[m]	C	RRI
2751.6	[m]	C	OD
2754.0	[m]	C	RRI
2756.0	[m]	C	RRI
2757.0	[m]	C	RRI
2764.0	[m]	C	RRI

2765.0	[m]	C	RRI
2765.4	[m]	C	OD
2766.0	[m]	C	RRI
2767.0	[m]	C	RRI
2768.0	[m]	C	RRI
2768.5	[m]	C	OD
2769.0	[m]	C	RRI
2770.0	[m]	C	RRI
2771.0	[m]	C	RRI
2771.0	[m]	C	OD
2772.0	[m]	C	RRI
2773.0	[m]	C	RRI
2773.5	[m]	C	OD
2775.0	[m]	C	RRI
2778.0	[m]	C	RRI
2780.0	[m]	C	RRI
2782.5	[m]	C	OD
2783.0	[m]	C	RRI
2786.0	[m]	C	RRI
2786.5	[m]	C	OD
2788.0	[m]	C	RRI
2789.2	[m]	C	OD
2789.5	[m]	C	OD
2790.0	[m]	C	RRI
2792.0	[m]	C	RRI
2794.0	[m]	C	RRI
2796.0	[m]	C	RRI
2798.0	[m]	C	RRI
2800.0	[m]	C	RRI
2802.0	[m]	C	RRI
2804.0	[m]	C	RRI
2806.0	[m]	C	RRI
2808.0	[m]	C	RRI
2810.0	[m]	C	RRI
2812.0	[m]	C	RRI
2814.0	[m]	C	RRI
2814.6	[m]	C	OD
2816.0	[m]	C	RRI
2820.0	[m]	DC	RRI
2825.0	[m]	DC	RRI

2825.0	[m]	DC	OD
2830.0	[m]	DC	RRI
2835.0	[m]	DC	RRI
2835.0	[m]	DC	OD
2845.0	[m]	DC	OD
2845.0	[m]	DC	RRI
2855.0	[m]	DC	OD
2865.0	[m]	DC	OD
2875.0	[m]	DC	OD
2885.0	[m]	DC	OD
2895.0	[m]	DC	OD
2900.0	[m]	DC	RRI
2905.0	[m]	DC	OD
2915.0	[m]	DC	OD
2915.0	[m]	DC	RRI
2925.0	[m]	DC	OD
2935.0	[m]	DC	OD
2940.0	[m]	DC	RRI
2945.0	[m]	DC	OD
2950.0	[m]	DC	RRI
2955.0	[m]	DC	OD
2960.0	[m]	DC	RRI
2965.0	[m]	DC	RRI
2965.0	[m]	DC	OD
2970.0	[m]	DC	RRI
2975.0	[m]	DC	RRI
2975.0	[m]	DC	OD
2985.0	[m]	DC	OD
2990.0	[m]	DC	RRI
2995.0	[m]	DC	RRI
2995.0	[m]	DC	OD
3000.0	[m]	DC	RRI
3005.0	[m]	DC	OD
3010.0	[m]	DC	RRI
3015.0	[m]	DC	OD
3020.0	[m]	DC	RRI
3025.0	[m]	DC	RRI
3025.0	[m]	DC	OD
3030.0	[m]	DC	RRI
3035.0	[m]	DC	OD

3040.0	[m]	DC	RRI
3045.0	[m]	DC	OD
3045.0	[m]	DC	RRI
3050.0	[m]	DC	RRI
3055.0	[m]	DC	RRI
3055.0	[m]	DC	OD

Lithostratigraphy

Top depth [mMD RKB]	Lithostrat. unit
914	NORDLAND GP
914	NAUST FM
1642	KAI FM
1664	HORDALAND GP
1664	BRYGGE FM
2327	ROGALAND GP
2327	TARE FM
2446	TANG FM
2718	EGGA FM (INFORMAL)
2780	SHETLAND GP
2780	SPRINGAR FM
2848	NISE FM

Composite logs

Document name	Document format	Document size [MB]
3144	pdf	0.36

Geochemical information

Document name	Document format	Document size [MB]
3144_1	pdf	1.25
3144_2	pdf	1.32

Documents - reported by the production licence (period for duty of secrecy expired)

Document name	Document format	Document size [MB]
3144_6305_5_1_COMPLETION_REPORT	pdf	18.96

Logs

Log type	Log top depth [m]	Log bottom depth [m]
CBL VDL GR	2130	2697
CBL VDL GR ACTS	1400	2055
CMR/GR/ACTS	2736	2860
CST GR ACTS	1574	2141
CST GR ACTS	2835	2985
DLL MSFL SDT LDT CNT	1933	2286
FMI DSI NGT ACTS	2137	2303
FMI DSI NGT ACTS	2670	3040
HALS TLD HGNS DSI GP	1513	2143
HALS TLD HGNS GPIT	1933	3040
HALS TLD HGNS GPIT	2137	2303
MDT GR ACTS	2731	2890
MDT GR ACTS	2747	2764
MDT GR ACTS	2770	2790
MDT GR ACTS	2793	2793
MDT/GR/ACTS	2727	2848
MWD GR RES DIR	915	3053
VSP GR	1670	2995

Casing and leak-off tests

Casing type	Casing diam. [inch]	Casing depth [m]	Hole diam. [inch]	Hole depth [m]	LOT/FIT mud eqv. [g/cm3]	Formation test type
CONDUCTOR	30	994.5	36	996.0	0.00	LOT
SURF.COND.	20	1536.0	26	1544.0	1.44	LOT
INTERM.	13 3/8	2137.0	17 1/2	2156.0	1.59	LOT
INTERM.	9 5/8	2726.0	12 1/4	2730.0	0.00	LOT
LINER	7	3053.0	8 1/2	3053.0	0.00	LOT

Drilling mud

Depth MD [m]	Mud weight [g/cm3]	Visc. [mPa.s]	Yield point [Pa]	Mud type	Date measured
996	1.20			KCL Brine	30.07.1997
1000	1.06			Spud	27.07.1997
1544	1.20	13.0	15.0	KCL Brine	06.08.1997
1544	1.17	9.0	6.5	KCL Polymer	14.08.1997
1681	1.30	16.0	13.5	KCL Polymer	17.08.1997
2150	1.30	20.0	20.0	KCL Polymer	22.08.1997
2160	1.26	13.0	12.0	KCL Polymer	24.08.1997
3053	1.26	17.0	16.5	KCL Polymer	07.09.1997

Thin sections at the Norwegian Offshore Directorate

Depth	Unit
2350.00	[m]
2789.05	[m]
2736.90	[m]

Pressure plots

The pore pressure data is sourced from well logs if no other source is specified. In some wells where pore pressure logs do not exist, information from Drill stem tests and kicks have been used. The data has been reported to the NPD, and further processed and quality controlled by IHS Markit.

Document name	Document format	Document size [MB]
3144_Formation_pressure_(Formasjonstrykk)	PDF	0.28